ACCELERATED DOCUMENT DISTRIBUTION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9309070277 DOC.DATE: 93/08/27 NOTARIZED: YES DOCKET #
FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH.NAME AUTHOR AFFILIATION
HABERMEYER,H. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Application for amend to License NPF-63,revising TS 2.1.1, 2.2.1,3.1.1,3.2.5,3.9.1,5.4.2 & associated bases re Cycle 6 fuel transition.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 15+27
TITLE: OR Submittal: General Distribution

NOTES:Application for permit renewal filed. 05000400

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-1 LA	1	1	PD2-1 PD	1	1
	LE,N	2	2			
INTERNAL:	ACRS	6	6	NRR/DE/EELB	1	1
	NRR/DORS/OTSB	1	1	NRR/DRCH/HICB	1	1
	NRR/DRPW	1	1	NRR/DSSA/SPLB	1	1
	NRR/DSSA/SRXB	1	1	NUDOCS-ABSTRACT	1	1
	OC/LFDCB	1	0	OGC/HDS1	1	0
	REG FILE 01	1	1			
EXTERNAL:	NRC PDR	1	1	NSIC	1	1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 20

AA2

R I D S / A D D S

CP&L

Carolina Power & Light Company

P.O. Box 1551 • Raleigh, N.C. 27602

AUG 27 1993

H. W. HABERMEYER, JR.
Vice President
Nuclear Services Department

SERIAL: GLS-93-839
10 CFR 50.90

Letter Number: HO-930146

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
CYCLE 6 FUEL TRANSITION - ADDITIONAL CHANGES

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant (SHNPP). The proposed amendment revises Technical Specifications 2.1.1, 2.2.1, 3.1.1, 3.2.5, 3.9.1, 5.4.2 and associated BASES. The changes result from the transition from nuclear fuel supplied by Westinghouse to nuclear fuel supplied by Siemens Power Corporation beginning with Cycle No. 6 and an RCS average temperature reduction effort. Specifically, the proposed changes will incorporate changes to reactor core safety limits, reactor trip system instrumentation setpoints, power distribution limits, and shutdown Boron concentration control to support the transition.

Enclosure 1 provides a detailed description of the proposed changes and the basis for the changes.

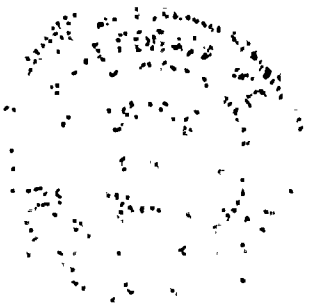
Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with the issuance of the amendment.

Enclosure 4 provides page change instructions for incorporating the proposed revisions.

Enclosure 5 provides the proposed Technical Specification pages.

A001
1/1



In accordance with 10 CFR 50.91(b), CP&L is providing the State of North Carolina with a copy of the proposed license amendment.

CP&L requests approval of the proposed amendment by March 1, 1994 in order to support the next SHNPP refueling outage, currently scheduled to begin in March 1994. In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendment, once approved by the NRC, be issued such that implementation will occur within 60 days of issuance of the amendment.

Please refer any questions regarding this submittal to Mr. D. C. McCarthy at (919) 362-2100.

Yours very truly,

H. W. Habermeyer, Jr.

SDC/sdc

Enclosures:
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages

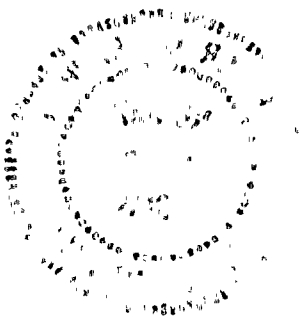
H. W. Habermeyer, Jr., having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Eleanor C. Chappell
Notary (Seal)

My commission expires: 2/6/96

ELEANOR C. CHAPPELL NOTARY PUBLIC WAKE COUNTY, N.C.

cc: Mr. Dayne H. Brown
Mr. S. D. Ebneter
Mr. N. B. Le
Mr. J. E. Tedrow



ENCLOSURE 1

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
CYCLE 6 FUEL TRANSITION - ADDITIONAL CHANGES

BASIS FOR CHANGE REQUEST

Background

Starting with Cycle No. 6, the Shearon Harris Nuclear Power Plant (SHNPP) will begin transitioning from nuclear fuel supplied by Westinghouse Electric Corporation to nuclear fuel designed and fabricated by Siemens Power Corporation (SPC). The transition will span 5 fuel cycles. Cycles 6 through 10 will have a mixed fuel core of varying composition during the transition. The SPC-designed fuel will be supported by SPC design methodology, while the Westinghouse fuel (such as allowed peaking and burnup limits) will continue to be supported by the original Westinghouse calculations.

The transition to SPC fuel will require Technical Specification changes in the following areas: reactor core safety limits, reactor trip system instrumentation setpoints, power distribution limits, shutdown Boron concentration control, and Core Operating Limits Report (COLR) references. CP&L submitted part of the Cycle No. 6 Technical Specification changes on July 16, 1993 (HNP-93-826). As discussed at a meeting between CP&L and the NRC in White Flint, Maryland on April 22, 1993 and at SHNPP on June 28, 1993, the changes submitted in the July amendment request are proposed references to NRC-approved methodologies and methodologies which are currently under review by the NRC for approval[1]. The remainder of the plant-specific changes are included in this submittal.

Proposed Change

The proposed amendment revises Technical Specifications 2.1.1, 2.2.1, 3.1.1, 3.2.5, 3.9.1, 5.4.2 and associated BASES. The changes result from the transition from nuclear fuel supplied by Westinghouse to nuclear fuel supplied by Siemens Power Corporation beginning with Cycle No. 6 and an RCS average temperature reduction effort. Specifically, the proposed changes will incorporate changes to reactor core safety limits, reactor trip system instrumentation setpoints, power distribution limits, and shutdown Boron concentration control to support the transition.

The changes proposed in this amendment request are outlined in the attached table.

---

[1] Reference: CP&L Letter to USNRC, July 16, 1993 (HNP-93-826), "Request for License Amendment - Cycle 6 Fuel Transition" enclosed change pages to Specification 6.9.1.6.2 Items 1, m and n.

Summary of Technical Specification Changes

Technical Specification	Change	Reason for the Change
2.1.1 Reactor Core - Safety Limits Figure 2.1-1 and BASES	Revise Reactor Core Safety Limits	Incorporate analyses using DNB correlation for Siemens fuel.
2.2.1 Limiting Safety Systems Settings - Reactor Trip System Instrumentation Trip Setpoints Table 2.2-1, Functional Unit: 7. Overtemperature ΔT 8. Overpower ΔT and BASES	$T' \leq 588.8°F$ to $T' \leq 580.8°F$ q_t-q_b exceeds +6.0% to q_t-q_b exceeds +12.0% $T'' \leq 588.8°F$ to $T'' \leq 580.8°F$	Program to reduce primary coolant average temperature Reduce potential of invoking OTΔT $f_1(\Delta I)$ function during normal operation. Program to reduce primary coolant average temperature
3.1.1.3 BASES, Reactivity Control Systems - Moderator Temperature Coefficient	Remove references to MDC used by Westinghouse.	Incorporate Siemens use of MTC.
3.2.5 Power Distribution Limits - DNB Parameters and BASES	$T_{ave} \leq 594.1°F$ to $T_{ave} \leq 586.1°F$	Program to reduce primary coolant average temperature
3.9.1 Refueling Operations - Boron Concentration	Add conditions to open Boric Acid Batch Tank outlet valve	Ensure consistency within the Specification and with accident analyses for Cycle 6 operations.
5.4.2 Design Features - RCS Design Volume	T_{ave} of 588.8°F to T_{ave} of 580.8°F	Program to reduce primary coolant average temperature

Basis

The proposed changes are discussed below in three segments:

a) Those changes related to the Transition core,
b) Those changes related to efforts to reduce the primary coolant average temperature, and
c) Changes related to shutdown boron concentration control.

a) Transition Core Related Changes

The reactor fuel supplied by Siemens (HTP) is somewhat different from that supplied by Westinghouse (LOPAR and Vantage5) with respect to thermal, hydraulic, and neutronic characteristics. Also, the methodologies used by Siemens to evaluate the accidents postulated in the Final Safety Analysis Report (FSAR) are different from the methodologies used by Westinghouse. The Technical Specifications and BASES have been revised to reflect the transition differences as follows:

Technical Specification 2.1.1, Figure 2.1-1 "Reactor Core Safety Limits-Three Loops in Operation"

Figure 2.1-1 (Page 2-2) provides a series of curves which define the limiting combinations of thermal power, Reactor Coolant System pressure, and average temperature below which the calculated DNBR is no less than the design DNBR value and the average enthalpy at the vessel exit is less than the enthalpy of saturated liquid. The existing Figure 2.1-1 was developed by Westinghouse for a core composed of only Westinghouse fuel assemblies. These curves have been revised for the Cycle 6 core which is composed of both Siemens HTP and Westinghouse Vantage 5 and LOPAR fuel assemblies. In all cases the curves on the revised figure are more restrictive than those on the existing figure. As such, the revised figure bounds the Siemens assemblies and any Westinghouse assemblies which might be used in future core designs. The new set of reactor safety limit curves have been established for the transition core using Siemens HTP correlations. An explanation of the HTP correlation is given in Item m of the previous Cycle 6 Transition Technical Specification Change Request[1].

The BASES associated with this Specification have also been revised to reflect the use of a transition core, the use of Siemens methodologies and the Safety Limit curves are based on limiting or bounding axial power shapes. The discussion of employing a statistical combination method to establish the "DNBR Uncertainty" used in the Westinghouse methodologies has been deleted because Siemens methodologies do not compute such an uncertainty.

Technical Specification 2.2.1, Table 2.2-1 "Reactor Trip System Instrumentation Trip Setpoints"

The Trip Setpoints have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their Safety Limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. Table 2.2-1 Functional Item 7, Overtemperature ΔT trip (OTΔT) provides core protection to prevent DNB for specified combinations of pressure, power, coolant temperature, and axial power distribution. One component of the OTΔT trip setpoint, the f(ΔI), reduces the OTΔT setpoint for axial power distributions that fall outside a specified deadband.

The upper limit of the f(ΔI) function deadband associated with the OTΔT Reactor Trip function has been changed from +6.0 to +12.0 percent. Siemens methodologies allow for a larger range of operating Axial Flux Distributions (AFDs) than Westinghouse methodologies. As such, actual operating ΔIs may be between +6.0 and +12.0 at the beginning of cycle. The deadband was increased to ensure that the difference between the setpoint and actual ΔT does not narrow for AFDs that may be experienced during normal operation of the plant. Reducing the difference between the setpoint and actual ΔT would result in less margin to an inadvertent trip caused by spurious temperature or pressure signals. Siemens used the methodologies described in the previous Cycle 6 Transition Technical Specification Change Request Items b and 1 to verify that the revised OTΔT function adequately mitigates applicable events.

The BASES statements on Page B 2-4 associated with Table 2.2-1 Items 3 & 4, Power range neutron flux high positive and low negative rate trips, has been revised to delete the statement that no credit will be taken for the negative flux rate trip. The Siemens analysis will take credit for the negative flux rate trip. The negative flux rate trip is required to be operable by Technical Specifications Table 2.2-1 Item 4 and Table 3.3-1 Item 4.

The BASES statements on Page B 2-5 associated with Table 2.2-1 Item 8, Overpower ΔT (OPΔT), have been revised to delete the reference to WCAP-9226 (a Westinghouse study of the Reactor Core Response to Excessive Secondary Steam Releases). Siemens does not taken credit for this trip function in the analyses of excessive secondary steam releases since OPΔT is not a primary mitigating trip for these events.

Technical Specification BASES 3.1.1.3 "Moderator Temperature Coefficient"

The BASES statements on Page B 3/4 1-2 describe an approach used by Westinghouse to determine the most negative MTC based on its relationship to MDC. The description has been deleted since it refers to an approach

that Siemens does not use. Siemens uses Moderator Temperature Coefficient (MTC) rather than Moderator Density Coefficient (MDC) in its analytical models.

b) T_{avg} Reduction Related Changes

The Shearon Harris Nuclear Power Plant (SHNPP) has undertaken a effort to reduce the average coolant temperature in the reactor coolant system for Cycle 6 in order to extend the service life of the steam generators. The T_{avg} reduction affects the initial conditions assumed in the accident analyses. The reduction in nominal T_{avg} at Rated Thermal Power from 588.8 °F to 580.8 °F will provide additional margin to DNB. Various Technical Specifications have been revised to incorporate the lower T_{avg} to ensure the analytical results of DNBR events better represent the actual margin to DNB. These Technical Specifications are as follows:

Technical Specification 2.2.1, Table 2.2-1 " Reactor Trip System Instrumentation Setpoints"

The Trip Setpoints have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their Safety Limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The Actual T_{avg} and T_{avg} at Rated Thermal Power (T′ and T′′) are input parameters used to determine the Overtemperature ΔT trip (OTΔT) and Overpower ΔT (OPΔT) trip setpoints. OTΔT (Table 2.2-1 Functional Item 7) provides core protection to prevent DNB for specified combinations of pressure, power, coolant temperature, and axial power distribution. OPΔT (Table 2.2-1 Item 8) provides core protection against fuel melt and cladding strain for specified combinations of temperature, and axial power distribution.

The Trip setpoint for OTΔT (see Note 1 on page 2-4 and page 2-8) has been changed to reflect the T_{avg} reduction. The value of T′ in the OTΔT function has been reduced from 588.8 °F to 580.8 °F to reflect the change in nominal T_{avg} at Rated Thermal Power. The OTΔT function will be more responsive to adverse conditions (high T_{avg}) at the revised T′ than at the existing T′ because it is closer to the new nominal T_{avg}. As such, this change improves DNBR margin for those events mitigated by the OTΔT trip.

The trip setpoint for OPΔT (see Note 3 on page 2-4 and page 2-10) has been changed to reflect the T_{avg} reduction. The value of T′′ in the OPΔT function has been reduced from 588.8 °F to 580.8 °F to reflect the change in nominal T_{avg} at Rated Thermal Power. The OPΔT function will be more responsive to adverse conditions (high T_{avg}) at the revised T′′ than at the existing T′′ because it is closer to the new nominal T_{avg}. As such, this change improves margin to fuel melt and cladding strain for those overpower events mitigated by the OPΔT trip.

Technical Specification 3.2.5, "DNB Parameters"

Technical Specification 3.2.5.a (page 3/4 2-14 and B 3/4 2-6) establishes the limiting initial T_{avg} used in the analysis of events which have DNBR as an acceptance criteria. The T_{avg} limit specified by T.S. 3.2.5.a and the BASES have been revised from 594.1 °F to 586.1 °F to reflect the 8 °F reduction in nominal T_{avg}. The difference between limit and nominal T_{avg} (5.3 °F) remains the same. This 5.3 °F is the maximum predicted difference between controlled and reference T_{avg} at Rated Thermal Power. The revised limit will produce analytical results which more realistically predict DNBR margin available than the existing limit.

Technical Specification 5.4.2 Reactor Coolant System Design Features - Volume

The Design Features Specification 5.4.2 (Page 5-6) has been revised to reflect the reduced value of T_{avg}.

c) Shutdown Boron Concentration Control

Technical Specification 3.9.1, Refueling Operations - Boron Concentration, places limitations on reactivity conditions during refueling (Mode 6 operations) to ensure that: (1) the reactor will remain subcritical during core alterations, and (2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. The LCO requires that the greater of two minimum boron concentration conditions be maintained, a concentration to maintain K_{eff} less than or equal to 0.95 as specified in the Core Operating Limits Report (COLR), or a concentration of greater than or equal to 2000 ppm.

Specification 3.9.1.b requires that the valves listed in Table 3.9-1, "Administrative controls to Prevent Dilution During Refueling", shall be in their positions required by the Table. Valve 1CS-510, which in the outlet line of the Boric Acid Batch Tank, is required to be locked closed unless the boric acid tank boron concentration is $\geq$ 2000 ppm. This amendment request revises the conditions under which valve 1CS-510 may remain open so that it more fully reflects the LCO and Action Statement requirements for minimum boron concentration in the RCS and refueling canal. This revision would replace the "$\geq$ 2000 ppm" with "the greater of 2000 ppm or the boron concentration required to maintain K_{eff} less than or equal to 0.95, as specified in the COLR." The addition of the wording to Table 3.9-1 eliminates the potential during Cycle 6 operations for a "dilution" path from the boric acid batch tank to the RCS when the RCS is required to be at a minimum concentration greater than 2000 ppm. This potential did not exist in previous cycles because the boron concentration necessary to maintain k_{eff} less than or equal to 0.95 has always been less than or equal to 2000 ppm.

ENCLOSURE 2

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
CYCLE 6 FUEL TRANSITION - ADDITIONAL CHANGES

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards determination. The bases for this determination are as follows:

Proposed Change

The proposed amendment revises Technical Specifications 2.1.1, 2.2.1, 3.1.1, 3.2.5, 3.9.1, 5.4.2 and associated BASES. The changes result from the transition from nuclear fuel supplied by Westinghouse to nuclear fuel supplied by Siemens Power Corporation beginning with Cycle No. 6 and an Reactor Coolant System average temperature reduction effort. Specifically, the proposed changes will incorporate changes to reactor core safety limits, reactor trip system instrumentation setpoints, power distribution limits, and shutdown Boron concentration control to support the transition.

Basis

This change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   a) The Reactor Core Safety Limits lines of Figure 2.1-1 provide the limits on T_{avg} and pressure which protect against DNB and hot leg saturation. These lines incorporate the results of analyses with both Siemens and Westinghouse DNB correlations. The revisions of these lines do not involve a significant increase in the probability or consequences of an accident previously evaluated. The lines are explicitly determined to provide the limits to protect against DNB and hot leg saturation. There is no change to the system, thus the accident precursors are unaffected. Therefore, there is no increase

in the probability of an accident previously evaluated. Because the limits are established to protect to the same criteria, there is no increase in the consequences of the accidents previously evaluated.

The expanded OTΔT deadband limits in this table reduce the potential of invoking the $f_1(\Delta I)$ function during normal operation. the revised OTΔT $f_1(\Delta I)$ setpoints have been incorporated in the plant analyses supporting Cycle 6 operation. Based on these analyses, the revision of this table does not involve a significant increase in the probability of consequences of an accident previously evaluated. The system is unchanged by this amendment, so the precursors to the accidents are unchanged. The revised setpoints were incorporated in the safety analyses. The results of these evaluations demonstrate compliance with the criteria identified in Chapter 15 of the Standard Review Plan (NUREG-0800).

b) The average coolant temperature is a boundary condition used in the plant neutronic and safety analyses. Siemens Power Corporation has incorporated the reduced T_{avg} in the plant analyses supporting Cycle 6 operation. Based on these analyses, the reduction does not involve a significant increase in the probability or consequences of an accident previously evaluated. The reduction in temperature does not change precursors that could cause any of the accidents previously evaluated. Therefore, the probability of the event is unchanged. The consequences of all of the accidents which are sensitive to the temperature reduction are evaluated by Siemens Power Corporation using their reload analysis methodologies. The results of these evaluations demonstrate compliance with the criteria identified in Chapter 15 of the Standard Review Plan. Therefore, there is not an increase in the consequences of an accident previously evaluated.

c) The addition of wording to Table 3.9-1 (valve 1CS-510) to reference the COLR required refueling boron concentration has no effect on the consequences of accidents previously evaluated in the FSAR. The change places more restrictive conditions on the boric acid batch tank boron concentration before the tank discharge valve may be opened. The additional conditions reduce the probability of an accident previously evaluated in the FSAR (boron dilution accident in Mode 6) if the required refueling boron concentration is in excess of 2000 ppm. It has no impact on the probability of a dilution accident if the required refueling boron concentration is equal to 2000 ppm.

Therefore, there would be no significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   a) The Reactor Core Safety Limits lines of Figure 2.1-1 provide the limits on T_{avg} and pressure which protect against DNB and hot leg saturation. These lines incorporate the results of analyses with both Siemens and Westinghouse DNB correlations. The revisions of these lines do not create the possibility of a new or different kind of accident from any accident previously evaluated. Because the system is unchanged, the precursors to any accidents are unchanged. Therefore, the possibility of a new or different kind of accident from those previously evaluated is not changed.

   The expanded OTΔT deadband limits in this table reduce the potential of invoking the $f_1(\Delta I)$ function during normal operation. the revised OTΔT $f_1(\Delta I)$ setpoints have been incorporated in the plant analyses supporting Cycle 6 operation. Based on these analyses, the revision of this table does not create the possibility of a new or different kind of accident from any accident previously evaluated. Because the system is unchanged for fuel related accidents, the possibility of a new or different kind of accident from any fuel related accident previously evaluated is unchanged.

   b) The average coolant temperature is a boundary condition used in the plant neutronic and safety analyses. Siemens Power Corporation has incorporated the reduced T_{avg} in the plant analyses supporting Cycle 6 operation. Based on these analyses, the reduction does not create the possibility of a new or different kind of accident from any accident previously evaluated. Because the precursors are unchanged for fuel related accidents, the possibility of a new or different kind of accident from any fuel related accident previously evaluated is unchanged.

   c) The addition of wording to Table 3.9-1 to reference the COLR required refueling boron concentration does not create the possibility of a new accident than any previously evaluated in the FSAR. This TS change will eliminate the possibility of a dilution path in Mode 6 with the required refueling boron concentration in excess of 2000 ppm.

   Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in the margin of safety.

   a) The Reactor Core Safety Limits lines of Figure 2.1-1 provide the limits on T_{avg} and pressure which protect against DNB and hot leg

saturation. These lines incorporate the results of analyses with both Siemens and Westinghouse DNB correlations. The revisions of these lines do not involve a significant reduction in the margin of safety. The limits should be changed to incorporate the DNB characteristics of the Siemens fuel as well as the Westinghouse fuel. The limits are explicitly determined using the same criteria as before. Therefore, there is no significant reduction in the margin of safety.

The expanded OTΔT deadband limits in this table reduce the potential of invoking the $f_1(\Delta I)$ function during normal operation. The revised OTΔT $f_1(\Delta I)$ setpoints have been incorporated in the plant analyses supporting Cycle 6 operation. Based on these analyses, the revision of this table does not involve a significant reduction in the margin of safety. The revised OTΔT setpoint is incorporated in the safety evaluations. These evaluations must satisfy the criteria defined in Chapter 15 of the Standard Review Plan consistent with the SHNPP licensing basis as defined in the FSAR. Because the criteria are unchanged, there is not a significant reduction in the margin of safety.

b) The average coolant temperature is a boundary condition used in the plant neutronic and safety analyses. Siemens Power Corporation has incorporated the reduced T_{avg} in the plant analyses supporting Cycle 6 operation. Based on these analyses, the reduction does not involve a significant reduction in the margin of safety. The reduction in temperature is explicitly included in the safety evaluations. These evaluations must satisfy the criteria defined in Chapter 15 of the Standard Review Plan consistent with the SHNPP licensing basis as defined by the FSAR. Because the criteria are unchanged, there is not a significant reduction in the margin of safety.

c) The addition of wording to Table 3.9-1 to reference the COLR required refueling boron concentration does not reduce the margin of safety since the TS requirement on valve position will have a more restrictive condition than currently exists.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

ENCLOSURE 3

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
CYCLE 6 FUEL TRANSITION - ADDITIONAL CHANGES

ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Proposed Change

The proposed amendment revises Technical Specifications 2.1.1, 2.2.1, 3.1.1, 3.2.5, 3.9.1, 5.4.2 and associated BASES. The changes result from the transition from nuclear fuel supplied by Westinghouse to nuclear fuel supplied by Siemens Power Corporation beginning with Cycle No. 6 and an Reactor Coolant System average temperature reduction effort. Specifically, the proposed changes will incorporate changes to reactor core safety limits, reactor trip system instrumentation setpoints, power distribution limits, and shutdown Boron concentration control to support the transition.

Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Enclosure 2, the proposed amendment does not involve a significant hazards consideration.

2. The proposed amendment does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

   The proposed amendment does not introduce any new equipment, nor does it

require existing systems to perform a different type of function than they are currently designed to perform. As such, the change can not affect the types or amounts of any effluents that may be released off-site.

3. The proposed amendment does not result in an increase in individual or cumulative occupational radiation exposure.

The proposed revisions do not result in changes to Technical Specification surveillance requirements and do not affect personnel radiation exposure. Therefore, the amendment has no affect on either individual or cumulative occupational radiation exposure.

ENCLOSURE 4
SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
CYCLE 6 FUEL TRANSITION - ADDITIONAL CHANGES

PAGE CHANGE INSTRUCTIONS

Removed Page	Inserted Page
2-2	2-2
2-8	2-8
2-10	2-10
B 2-1	B 2-1
B 2-1a	B 2-1a
B 2-4	B 2-4
B 2-5	B 2-5
3/4 2-14	3/4 2-14
3/4 9-2	3/4 9-2
-	3/4 9-2a
B 3/4 1-2	B 3/4 1-2
B 3/4 2-6	B 3/4 2-6
5-6	5-6